pillars; and *Cordyceps,* parasitic especially on various subterranean insect-larvæ. Attention was called to the economic importance of these fungi, and to the possibility of the use of *Empusa Anlicæ,* parasitic on the caterpillars of the brown-tail moth, in fighting the moth-pest. The paper was illustrated by specimens of the various fungi described.

At the 91st meeting, held on November 5, Dr. Caroline B. Thompson reviewed the recent work of McClung, Montgomery, Wilson, Stevens and others, on the chromosomes of insects, and especially Wilson's theory of the heterochromosomes as sex determinants.

MARY T. HOLLISTER,
Secretary

THE ELISHA MITCHELL SCIENTIFIC SOCIETY OF THE UNIVERSITY OF NORTH CAROLINA

THE 173d meeting was held in the main lecture hall of the Chemical Laboratory, Tuesday evening, November 12, 1907, at 7:30 o'clock. Dr. W. C. Coker described "A Trip to Porto Rico." The talk was fully illustrated with lantern slides and a large collection of botanical specimens.

A. S. WHEELER,
Recording Secretary

DISCUSSION AND CORRESPONDENCE

LODGE'S ETHER AND HUYGHENS'S GRAVITATION

THE alarming density of the ether which Sir Oliver Lodge believes must be taken into consideration is liable to leave one more open-mouthed with astonishment than did Lord Kelvin's famous molasses-candy ether, even if open mouths are suggested in connection with the latter. But 10^{12} grams per cubic centimeter is not an every-day experience, consciously at least. I have thought of it in relation to Huyghens's ingenious mechanism for gravitation. If a body rotates in a fluid *lighter* than itself, it must in virtue of centrifugal force and Archimedes's principle, *sink* toward the center of rotation. Electronists insist that the ether is absolutely stationary: but suppose that it rotated just a little with the earth. We may then write for the buoyancy per cubic centimeter $\rho_e\omega_e^2 R$ and for the centrifugal force per cubic centimeter of submerged matter $\rho_m\omega_m^2 R$, where ρ, ω, R denote density, angular velocity and radius of curvature, respectively. In other words

$$\omega_e^2/\omega_m^2 = \rho_m/\rho_e = 10^{-12};$$

that is, if the angular velocity of the ether were but one millionth that of the earth about the sun, there would be no centrifugal force to compensate gravitation. The brilliant experiments of our recent medallists show that observationally, $\omega_e = \omega_m$. The electronist gets around this by the principle of relativity. But if, granting Lodge's ether as little as $\omega_m/10^6$ would imply conditions comparable with gravitation, one can not escape a little uneasiness unless, from the interpenetration of matter and ether, ρ_m is ultimately, *i. e.,* per corpuscle, much larger than ρ_e. As a whole, however, a fixed ether would be the only satisfactory inference.

CARL BARUS
BROWN UNIVERSITY,
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METAGENESIS IN INSECTS

IN a recently issued paper by Professor Montgomery[1] attention is called again to the condition approaching an alternation of generations in the case of insects with complete metamorphosis:

> Among insects with a more or less complete metamorphosis the crawling larva becomes a quiescent pupa; then from a series of points of the hypodermis of the pupa the organs of the imago are formed, while all the remaining tissues of the pupa degenerate by histolysis and then become ingested by phagocytes. Therefore an adult fly or moth or wasp is an individual quite different from the pupa, an individual produced asexually by the conjunction of a series of buds. This is in every sense as truly metagenetic as the development of a medusa from a polyp (Montgomery).

This is, in a way, true (the word larva, however, should be substituted for pupa in most of the above, as the histoblasts from which the adult parts are derived are already distinguishable and have begun development in the larva), and is suggestive. And the fact

[1] *Trans. Texas Acad. Sci.,* Vol. IX., pp. 75–94.